WHAT IS CLAIMED IS:

1. In a two-fiber optical ring network having a plurality of nodes linked by a first fiber and a second fiber and each fiber including a plurality of protection and working channels, each of the nodes comprising:

a first splitting section for splitting optical signals from optical signals traveling through the first fiber into the protection channels;

a first add/drop section for performing adding and/or dropping optical signals passing through the first splitting section to a plurality of channels;

a first switching section for combining optical signals in the protection channels to the first fiber when there is no link failure between adjacent nodes and for combining optical signals in the protection channels to the second fiber when there is a link failure between adjacent nodes; and,

a controlling section for identifying whether or not the optical link failure occurs in the fibers and for generating a control signal to activate a restoration process according to the identified outcome.

2. The node according to claim 1, wherein the first splitting section comprises an optical filter.

3. The node according to claim 1, further comprising:

a second splitting section for splitting optical signals from optical signals traveling through the first fiber into the protection channels;

a second add/drop section for performing adding and/or dropping of optical signals passing through the first splitting section to a plurality of channels; and,

a second switching section for combining optical signals in the protection channels to the first fiber when there is no link failure between adjacent nodes and for combining optical signals in the protection channels to the second fiber when there is a link failure between adjacent nodes.

4. The node according to claim 1, wherein the second splitting section comprises an optical filter.

5. The node according to claim 1, wherein the first add/drop section comprises:

a first demultiplexer for performing wavelength-division demultiplexing optical signals inputted through the first splitting section and for outputting a plurality of channels from the demultiplexed optical signals;

a first optical receiver for performing a photoelectric conversion with respect to channels dropped from the first demultiplexer and for outputting the converted channels;

a first tap coupler, provided on a path between the first demultiplexer and the first optical receiver, for splitting a part of the channel inputted into the first optical receiver and for outputting the split channel to the controlling section;

a first optical transmitter for outputting channels to be added;

a second tap coupler, provided on a path between the first optical transmitter and the first demultiplexer, for splitting a part of the channel outputted from the first optical transmitter and for outputting the split channel to the controlling section; and,

a first multiplexer for performing wavelength-division-multiplexing channels inputted from the first demultiplexer and from the first optical transmitter and for outputting the multiplexed channels.

6. The node according to claim 5, wherein the first demultiplexer comprises an arrayed waveguide grating.

7. The node according to claim 5, wherein the first optical transmitter comprises a laser diode.

8. The node according to claim 5, wherein the first optical receiver comprises a photodiode.

9. The node according to claim 5, wherein the first switching section comprises:

a first switch for performing passing or switching of optical signals in the protection channels inputted from the first splitting section based on a control signal generated by the controlling section;

a first coupler for combining optical signals in the protection channels passing through the first switch with optical signals inputted from the second add/drop section and for outputting the combined results;

a second coupler for combining the added/dropped optical signals inputted from the first multiplexer and optical signals in the protection channels inputted from the first coupler and for outputting the combined results; and,

a third coupler, provided between the second splitting section and the second add/drop section, for combining output channels outputted from the first switch with optical signals outputted from the second splitting section.

10. The node according to claim 9, wherein the second add/drop section comprises:

a second demultiplexer for performing wavelength-division demultiplexing optical signals inputted through the second splitting section and for outputting a plurality of channels from the demultiplexed optical signals;

a second optical receiver for performing a photoelectric conversion with respect to channels dropped from the second demultiplexer and for outputting the converted channels;

a second tap coupler, provided on a path between the second demultiplexer and the second optical receiver, for splitting a part of the channel inputted into the second optical receiver and for outputting the split channel to the controlling section;

a second optical transmitter for outputting channels to be added;

a fourth tap coupler, provided on a path between the second optical transmitter and the second demultiplexer, for splitting a part of the channel outputted from the second optical transmitter and for outputting the split channel to the controlling section; and,

a second multiplexer for performing wavelength-division-multiplexing channels inputted from the second demultiplexer and from the first optical transmitter and for outputting the multiplexed channels.

11. The node according to claim 9, wherein the second demultiplexer comprises an arrayed waveguide grating.

12. The node according to claim 9, wherein the first optical transmitter comprises a laser diode.

13. The node according to claim 9, wherein the first optical receiver comprises a photodiode.

14. The node according to claim 10, wherein the second switching section comprises:

a second switch for performing passing or switching of optical signals in the protection channels inputted from the second splitting section based on a control signal generated by the controlling section;

a fourth coupler for combining optical signals in the protection channels passing through the second switch with channels inputted from the first add/drop section and for outputting the combined results;

a fifth coupler for combining the added/dropped optical signals inputted from the second multiplexer and optical signals in the protection channels inputted from the fourth coupler and for outputting the combined results; and,

a sixth coupler, provided between the first splitting section and the first add/drop section, for combining output channels from the second switch with optical signals outputted from the first splitting section.